

**Work Order ID 53139**

October 23, 2009 8:40:18 AM



Page 1

Item ID: D407-667-205

Accept



Setup Start



Revision ID: F

Stop



Item Name: Crosstube Aft

Start Date: 23/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 13/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals:

Process Plan: *BL*Date: *09/10/23*

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

Draw Nbr

Revision Nbr

D407-667-245

Rev F

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile and create labels as per PPP D407-667-205 CHG006

*S orlu/25**HJ for BG 09/11/25*

110

0.00



Packaging

Packaging

Memo

0.00

Packaging

*MB 09-11-11*

120

0.00



BENDING MACHINE - CROSSTUBES

CNC Bend 1

Memo

0.00

CNC Delta 100 Bender


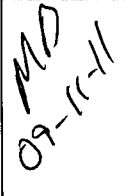
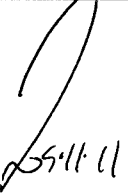

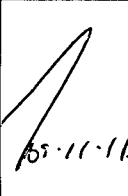
1-Bend tube as per Dwg D407-667-245 using CNC bender program 407 Aft and Folio FT

*DB 9-11-11*



| W/O: |      | WORK ORDER CHANGES |    |      |     |                                     |                          |
|------|------|--------------------|----|------|-----|-------------------------------------|--------------------------|
| DATE | STER | PROCEDURE CHANGE   | By | Date | Qty | Approval<br>Chief Eng /<br>Prod Mgr | Approval<br>QC Inspector |
|      |      |                    |    |      |     |                                     |                          |
|      |      |                    |    |      |     |                                     |                          |

Part No: D407-667-205 PAR #: 2/1 Fault Category: Cross tube NCR: Yes No DQA: 1 Date: 09.12.08  
 Resolution: accepted Disposition: use as-is QA: N/C Closed: 1 Date: 09.12.08

| NCR: <u>53139</u> |      | WORK ORDER NON-CONFORMANCE (NCR)                                     |  |  |  |  |  |  |
|-------------------|------|--|--|--|--|--|--|--|
| DATE              | STEP | Description of NC<br>Section A                                       | Corrective Action Section B  |  |  | Verification<br>Section C  | Approval<br>Chief Eng  | Approval<br>QC Inspector   |
|                   |      |  | Initial<br>Chief Eng   | Action Description<br>Chief Eng  | Sign &<br>Date   |  |  |  |
| 09.11.11          | 140  | Tube is slightly off on<br>the height by 0.185".<br><br>R.C. process |  | chill cut off 'A' to match<br>cut off 'B' to level out<br>the tube upon installation | <br>09-11-11 |  |  |  |
|                   |      |  |  |  |  |  |  |  |
|                   |      |  |  |  |  |  |  |  |

NOTE: Date & initial all entries



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Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

| Sequence ID/<br>Work Center ID | Operation<br>Description | Set Up/<br>Run Hours | Draw<br>Number | Draw<br>Rev. | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--------------------------|----------------------|----------------|--------------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|----------------|--------------|--------------|---------------|---------------|------------------|----------------|

160

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

1

10/11/12

170

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

1

10/11/12

180

Outsource process - NDT per QSI038 4.1

0.00



Outsource2

Memo

0.00

Outsource process - NDT

Liquid Penetrant Inspection as per QSI 038 Or ☐ Issue P/Q 10748 LPI as per ASTM 1417 ☐ Level 2 Attach copy of NDT results to work order

C.I.

10/11/12 ①

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Revision ID: F

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Start Date: 23/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 13/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

| Sequence ID/<br>Work Center ID | Operation<br>Description | Set Up/<br>Run Hours | Draw<br>Number | Draw<br>Rev. | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--------------------------|----------------------|----------------|--------------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|----------------|--------------|--------------|---------------|---------------|------------------|----------------|

190

0.00



Packaging

Packaging

Memo

0.00

Packaging

Ensure copy of NDT results attached to work order.

*Handwritten signature and date 12/11/12*

200

0.00



QC5- Inspect part completeness to step on W/O

QC

Memo

0.00

Quality Control

*Handwritten signature and date 09 11 19*

210

0.00



SprayPaint

SprayPaint

Memo

0.00

Spray Painting

1-Prime inside and outside crosstube as per QSI 005 4.2 12-Paint outside crosstube with White Imron as per QSI 005 4.2  
Time: 4:30 ☐ Finish Time: 10:30 ☐ PAINT: ☐ Start  
Time: 3:30 ☐ Finish Time: 4:30

*Handwritten signature and date 09 11 19*

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Cust Item ID:

Required Date: 13/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

| Sequence ID/<br>Work Center ID | Operation<br>Description | Set Up/<br>Run Hours | Draw<br>Number | Draw<br>Rev. | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--------------------------|----------------------|----------------|--------------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|----------------|--------------|--------------|---------------|---------------|------------------|----------------|

220 QC14- Inspect Spray Paint

0.00



QC

Memo

0.00

Quality Control

Then, Wrap in plastic bag to protect from scratches

IT 09 11 20

230

0.00



Crosstubes

Crosstubes

Memo

0.00

Crosstubes

1-Install abrasion strips as per QSI 035 using DT8674. Install chafing shield as per Dwg D407-667-245. Note: (3) top holes should be facing up. 2- Lightly scuff the bonded area using a 320 grit sand paper and clean the area with 41058 wash 'n' wipe

B 112417 exp: 01/2011

Torgue 0.01 11 24 1

m/l 09 11 23 1

240

0.00



QC

QC5- Inspect part completeness to step on W/O

Memo

0.00

Quality Control

2) 801/124



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Cust Item ID:

Required Date: 13/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

250

Pick Kit

0.00



Packaging

Memo

0.00

Packaging

9/11/25

260

QC4- 100% Inspect kits for completeness

0.00



QC

Memo

0.00

Quality Control

2/8 or lubr



270

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and in kanban rack ☐ Location: \_\_\_\_\_

MUR

9/11/25



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Setup Start



Revision ID: F

Stop



Item Name: Crosstube Aft

Start Date: 23/10/2009 Start Qty: 1.00



Cust Item ID:

Required Date: 13/11/2009 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run HoursDraw  
NumberDraw  
Rev.Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

280

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

09/11/25

09-11-25

# Picklist Print

October 23, 2009 8:40:22 AM

Page 1

Work Order ID: 53139

Parent Item: D407-667-205RevF

Parent Item Name: Crosstube Aft

Comments:

Start Date: 23/10/2009

Required Date: 13/11/2009

Start Qty: 1.00

Required Qty: 1.00

| Component Item ID/<br>Item Name | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand | Remaining<br>Qty To Pick | Qty<br>Issued | Date<br>Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|--------------------------|---------------|----------------|--------|
| AN960JD516<br>Washer            |                        | Purchased     | No          |                     |                  | 100             | Each               | 1,595.000      | 18.0000                  |               | 9/11/25        | SP     |

| Warehouse       | Loc Qty | Loc Code |
|-----------------|---------|----------|
| <u>Location</u> |         |          |
| Main Warehouse  |         |          |
| ST              | 1595    |          |
| 100564          | 2       |          |
| 106167          | 6       |          |
| 107534          | 34      |          |
| 107959          | 43      |          |
| 108246          | 46      |          |
| 108672          | 2       |          |
| 109059          | 49      |          |
| 109752          | 22      |          |
| 110363          | 46      |          |
| 110523          | 57      |          |
| 111279          | 39      |          |
| 112082          | 68      |          |
| 112314          | 500     |          |
| 112794          | 181     |          |
| 112828          | 500     |          |

D2856-400RevA

Manufactured

No

230

f

169.7337

1.3558

Abraison Strip

| Warehouse       | Loc Qty     | Loc Code |
|-----------------|-------------|----------|
| <u>Location</u> |             |          |
| Main Warehouse  |             |          |
| ST403           | 169.7336842 |          |
| 50593           | 169.733684  |          |

ml 09 1124

# Picklist Print

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Work Order ID: 53139

Parent Item: D407-667-205RevF

Parent Item Name: Crosstube Aft


Start Date: 23/10/2009

Required Date: 13/11/2009

Start Qty: 1.00

Required Qty: 1.00

Comments:

| Component Item ID/<br>Item Name   | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand | Remaining<br>Qty To Pick | Qty<br>Issued | Date<br>Issued | Status |
|---|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|--------------------------|---------------|----------------|--------|
| D2873-043RevA   |                        | Manufactured  | No          |                     |                  | 230             | Each               | 41.0000        | 2.0000                   |               |                |        |
|  |                        |               |             |                     |                  |                 |                    |                |                          |               |                |        |

Nut Plate Assembly

| <u>Warehouse</u> | <u>Loc Qty</u> | <u>Loc Code</u> |
|------------------|----------------|-----------------|
| <u>Location</u>  |                |                 |
| Main Warehouse   |                |                 |
| ST               | 41             |                 |
| 45370            | 6              |                 |
| 45422            | 15             |                 |
| <u>50002</u>     | 20             |                 |

m/l or 11 24

D2873-045RevA

Manufactured No



Nut Plate Assembly

| <u>Warehouse</u> | <u>Loc Qty</u> | <u>Loc Code</u> |
|------------------|----------------|-----------------|
| <u>Location</u>  |                |                 |
| Main Warehouse   |                |                 |
| ST               | 59             |                 |
| 45210            | 3              |                 |
| 46772            | 16             |                 |
| <u>50001</u>     | 40             |                 |

m/l or 11 24

# Picklist Print

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Work Order ID: 53139

Parent Item: D407-667-205RevF

Parent Item Name: Crosstube Aft


Start Date: 23/10/2009

Required Date: 13/11/2009

Start Qty: 1.00


Required Qty: 1.00

Comments:

| Component Item ID/<br>Item Name   | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand | Remaining<br>Qty To Pick | Qty<br>Issued | Date<br>Issued | Status |
|---|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|--------------------------|---------------|----------------|--------|
| D2894-1RevD   |                        | Manufactured  | No          |                     |                  | 230             | Each               | 29.0000        | 1.0000                   |               |                |        |
|  |                        |               |             |                     |                  |                 |                    |                |                          |               |                |        |
| 2.750 Support   |                        |               |             |                     |                  |                 |                    |                |                          |               |                |        |


| <u>Warehouse</u> | <u>Loc Qty</u> | <u>Loc Code</u> |
|------------------|----------------|-----------------|
| <u>Location</u>  |                |                 |
| Main Warehouse   |                |                 |
| ST               | 29             |                 |
| 43713            | 10             |                 |
| 43881            | 18             |                 |
| 45483            | 1              |                 |

mt 091123

|   |  |              |    |  |  |     |      |         |        |  |  |  |
|---|--|--------------|----|--|--|-----|------|---------|--------|--|--|--|
| D3190-1RevA   |  | Manufactured | No |  |  | 230 | Each | 30.0000 | 2.0000 |  |  |  |
|  |  |              |    |  |  |     |      |         |        |  |  |  |
| Chafing Shield  |  |              |    |  |  |     |      |         |        |  |  |  |

| <u>Warehouse</u> | <u>Loc Qty</u> | <u>Loc Code</u> |
|------------------|----------------|-----------------|
| <u>Location</u>  |                |                 |
| Main Warehouse   |                |                 |
| ST               | 30             |                 |
| 40109            | 10             |                 |
| 47456            | 20             |                 |

mt 091124

|   |  |              |    |  |  |     |      |        |        |  |  |  |
|---|--|--------------|----|--|--|-----|------|--------|--------|--|--|--|
| D407-667-205TRNRevF   |  | Manufactured | No |  |  | 230 | Each | 2.0000 | 1.0000 |  |  |  |
|  |  |              |    |  |  |     |      |        |        |  |  |  |
| Crosstube Turning Detail  |  |              |    |  |  |     |      |        |        |  |  |  |

| <u>Warehouse</u> | <u>Loc Qty</u> | <u>Loc Code</u> |
|------------------|----------------|-----------------|
| <u>Location</u>  |                |                 |
| Main Warehouse   |                |                 |
| FG               | 2              |                 |
| 48432            | 1              |                 |
| 48433            | 1              |                 |

MB 09-11-11

# Picklist Print

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Work Order ID: 53139

Parent Item: D407-667-205RevF

Parent Item Name: Crosstube Aft


Start Date: 23/10/2009

Required Date: 13/11/2009

Start Qty: 1.00

Required Qty: 1.00

Comments:

| Component Item ID/<br>Item Name  | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand | Remaining<br>Qty To Pick | Qty<br>Issued | Date<br>Issued | Status |
|--|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|--------------------------|---------------|----------------|--------|
| MS20601-AD4W8<br> |                        | Purchased     | No          |                     |                  | 230             | Each               | 300.0000       | 14.0000                  |               |                |        |
| RIVET  |                        |               |             |                     |                  |                 |                    |                |                          |               |                |        |

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

300

B110399

108521

100

112203

200

MS21920-22

Purchased

No

230

Each

98.0000

4.0000



Clamp(per MIL-DTL-8783C)

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST

98

109495

6

110260

42

111210

50

ml or 11 24

ml or 11 24

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Parent Item Name: Crosstube Aft

Comments:

Start Date: 23/10/2009

Required Date: 13/11/2009

Start Qty: 1.00

Required Qty: 1.00

| Component Item ID/<br>Item Name | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand | Remaining<br>Qty To Pick | Qty<br>Issued | Date<br>Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|--------------------------|---------------|----------------|--------|
| S AN5-10A<br>Bolt               |                        | Purchased     | No          |                     |                  | 260             | Each               | 153.0000       | 10.0000                  |               | 9/11/25 SP     |        |

| Warehouse         | Loc Qty | Loc Code |
|-------------------|---------|----------|
| Location          |         |          |
| Main Warehouse    |         |          |
| ST                | 153     |          |
| 107013            | 8       |          |
| 110363            | 2       |          |
| 112314            | 26      |          |
| <del>112385</del> | 50      |          |
| 112805            | 17      |          |
| 112933            | 50      |          |

|                   |           |    |  |  |  |     |      |          |        |  |            |  |
|-------------------|-----------|----|--|--|--|-----|------|----------|--------|--|------------|--|
| S AN5-32A<br>Bolt | Purchased | No |  |  |  | 260 | Each | 147.0000 | 4.0000 |  | 9/11/25 SP |  |
|-------------------|-----------|----|--|--|--|-----|------|----------|--------|--|------------|--|

| Warehouse         | Loc Qty | Loc Code |
|-------------------|---------|----------|
| Location          |         |          |
| Main Warehouse    |         |          |
| ST                | 147     |          |
| 106242            | 3       |          |
| 106519            | 4       |          |
| 110363            | 17      |          |
| 112082            | 23      |          |
| <del>112805</del> | 50      |          |
| 112933            | 50      |          |

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Start Date: 23/10/2009

Required Date: 13/11/2009

Start Qty: 1.00

Required Qty: 1.00

Comments:

| Component Item ID/<br>Item Name | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand | Remaining<br>Qty To Pick | Qty<br>Issued | Date<br>Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|--------------------------|---------------|----------------|--------|
| AN5-34A<br>Bolt                 |                        | Purchased     | No          |                     |                  | 260             | Each               | 34.0000        | 4.0000                   |               | 9/11/25        | sl     |

| Warehouse      | Loc Qty | Loc Code |
|----------------|---------|----------|
| Location       |         |          |
| Main Warehouse |         |          |
| ST             | 34      |          |
| 104679         | 2       |          |
| 105408         | 1       |          |
| 107013         | 2       |          |
| 111425         | 29      |          |

MS21042L5

Purchased

No

260

Each

1,077.000 4.0000

Nut

| Warehouse      | Loc Qty | Loc Code |
|----------------|---------|----------|
| Location       |         |          |
| Main Warehouse |         |          |
| ST             | 1077    |          |
| 110382         | 10      |          |
| 111127         | 4       |          |
| 111636         | 63      |          |
| 112314         | 1000    |          |

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Comments:

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|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|--------------------------|---------------|----------------|--------|
| MS21920-25                      |                        | Purchased     | No          |                     |                  | 260             | Each               | 168.0000       | 2.0000                   |               |                |        |
|                                 |                        |               |             |                     |                  |                 |                    |                |                          |               |                |        |
| Clamp(per MIL-DTL-8783C)        |                        |               |             |                     |                  |                 |                    |                |                          |               |                |        |

9/11/25 SJ  
10

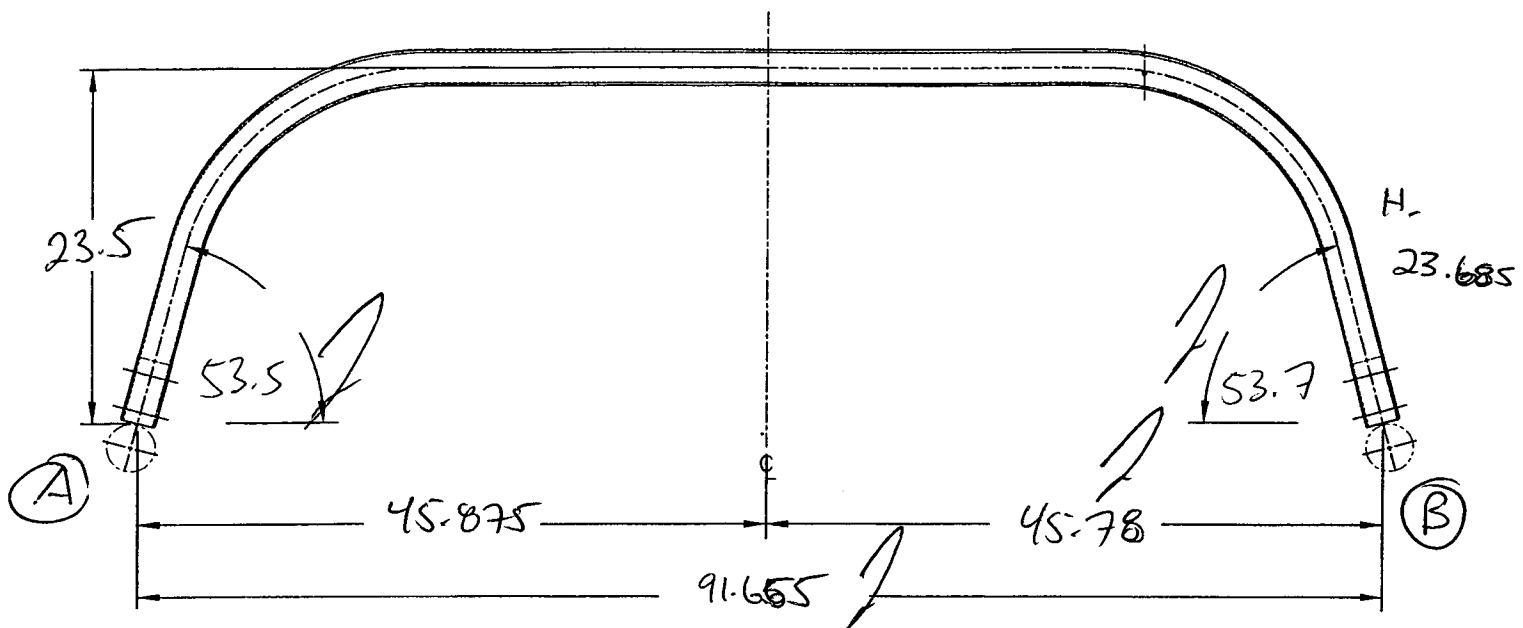
| <u>Warehouse</u> | <u>Loc Qty</u> | <u>Loc Code</u> |
|------------------|----------------|-----------------|
| <u>Location</u>  |                |                 |
| Main Warehouse   |                |                 |
| ST               | 168            |                 |
| 107456           | 2              |                 |
| 108111           | 3              |                 |
| 108975           | 17             |                 |
| 109181           | 48             |                 |
| 109644           | 10             |                 |
| 111282           | 4              |                 |
| 111429           | 9              |                 |
| 112495           | 50             |                 |
| 112919           | 25             |                 |

ML 091123



|                                       |  |              |              |
|---------------------------------------|--|--------------|--------------|
| DART AEROSPACE LTD                    |  | Work Order:  | B-53139      |
| Description: Crosstube High Aft (407) |  | Part Number: | D407-667-205 |
| Inspection Dwg: D407-667-245 Rev: F   |  | Page 1 of 1  |              |

| Required Dimension | Min   | Max   |
|--------------------|-------|-------|
| Height             | 23.46 | 23.58 |
| 1/2 Span           | 45.86 | 45.98 |
| Angle              | 54    | 56    |
| Total Span         | 91.72 | 91.96 |



| Comments                             |
|--------------------------------------|
| CUFF A to be drilled to match side B |
|                                      |
|                                      |

|                 |          |
|-----------------|----------|
| QC15 Inspection |          |
| Date            | 09.11.11 |

| Rev | Date     | Change          | Revised by | Approved |
|-----|----------|-----------------|------------|----------|
| A   | 07.02.06 | New Issue       | KJ/JM      |          |
| B   | 09.06.22 | Dwg Rev updated | KJ         |          |

| Item | QTY<br>-245 | PART NUMBER    | DESCRIPTION  |
|------|-------------|----------------|--|
| 1    | X           | D407-667-245   | CROSSTUBE ASSEMBLY (407 HIGH AFT)  |
| 2    | 1           | D6011-115      | CROSSTUBE  |
| 3    | 2           | D2856-400-773  | ABRASION STRIP   |
| 4    | 2           | D2873-043      | NUT PLATE  |
| 5    | 2           | D2873-045      | NUT PLATE  |
| 6    | 1           | D2894-1        | SUPPORT  |
| 7    | 2           | D3190-1        | CHAFING SHIELD   |
| 8    | 2           | D3595-063-430  | RUBBER CUSHION   |
| 9    | 14          | MS20601AD4W8   | RIVET (OR NAS9302B-4-8)  |
| 10   | 4           | MS21920-22     | CLAMP  |
| 11   | 2           | MS21920-25     | CLAMP (OR MS21920-24)  |
| 12   | A/R         | MAGNOBOND 6398 | ROCKWELL SPECIFICATION RBO-120-023<br>ADHESIVE (TEXTRON/BELL SPEC. 299-947-<br>100, TYPE II, CLASS 2 ADHESIVE) |

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UNCONTROLLED  
SUBJECT TO REVISION

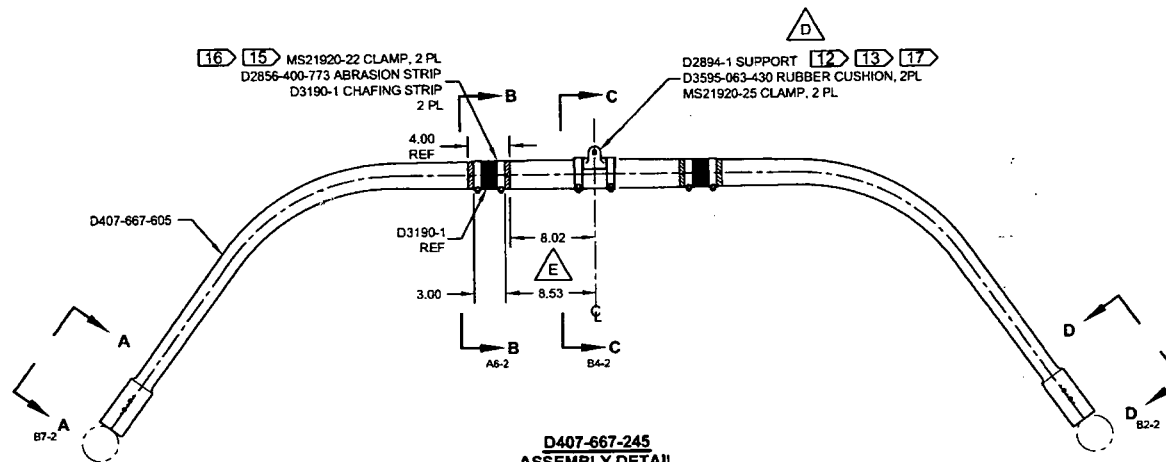
10-58139  
AL 08-10-23

#### GENERAL NOTES:

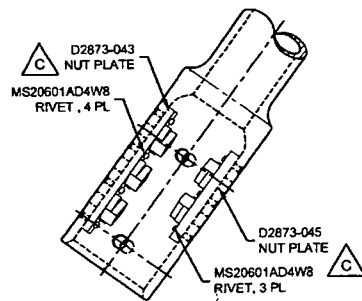
- 1) MATERIAL: MANUFACTURED FROM D6011-115  
FINISHED LENGTH = 112.91±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1  
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2  
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D407-667-245" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: 27.7 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN-OFF PART. BLEND OUT EDGE LONGITUDINALLY. TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 6 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2894-1 CENTER SUPPORT USING A 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI 015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-25 CLAMPS WITH D3595-063-430 RUBBER CUSHIONS TO SECURE D2894-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE OPPOSITE CROSSTUBE SUPPORT.  
NOTE: MS21920-24 CLAMPS CAN BE USED TO ACCOMMODATE VARYING DIAMETERS. ENSURE THERE IS A MINIMUM OF 1.5 THREADS IN SAFETY ON THE NUTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) INSTALL D2856-400-773 ABRASION STRIP WITH A 0.13 (REF) GAP ON BOTTOM SIDE OF CROSSTUBE, PER QSI 035.
- 16) INSTALL D3190-1 CHAFING SHIELDS SO THAT OVERLAP IS ON BOTTOM SIDE OF CROSSTUBE OPPOSITE D2894-1 SUPPORT.
- 17) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

RELEASED  
08/11/12

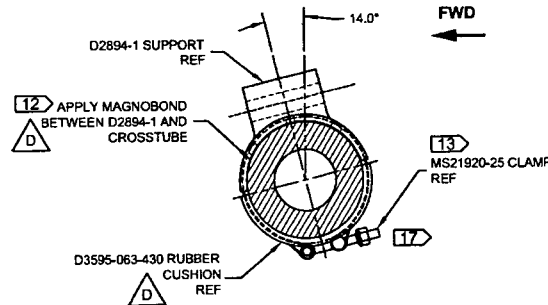
|            |   |  |              |
|------------|---|--|--------------|
| F          | REFORMAT NOTES TO NEW STANDARDS (ZN B8-1);<br>RELOCATED FLAG # 6 (ZN A8-3) PER NCR 210;<br>REMOVED REF. & ADD TOLERANCES (ZN C6-3, C4-3 &<br>D2-3)  | RF   | 08.11.06     |
| E          | 8.02 AND 8.53 WERE 8.40 AND 8.90 (ZN D5-2);<br>REORGANIZED VIEWS AND REFORMATED DRAWING<br>TO CURRENT STANDARDS.<br>REASONS: CLAMPS MOVED 0.375 TOWARD CL TO<br>ELIMINATE INTERFERENCE WITH AIRCRAFT MOUNTS.<br>REFERENCE: PAR#08-21 AND ECR#1225 | MB   | 08.07.24     |
| D          | ADD VIEW FOR OEM SKID HOLES, ROTATE<br>ORIENTATION OF CLAMPS SECTION F-F, REMOVE<br>-851 ABRASION STRIP, ADD MAGNOBOND 6398, ADD<br>CUSHION   | PH   | 07.02.07     |
| C          | ADD HOLES AND NUT PLATES FOR<br>COMPATIBILITY WITH BHT/AA SKIDTUBES   | PH   | 05.07.26     |
| B          | ADD CHAFING SHIELD  | CP   | 03.05.21     |
| A          | NEW ISSUE   | CP   | 02.05.13     |
| REV.       | DESCRIPTION   | BY   | DATE         |
| DESIGN     | RF  | DART AEROSPACE LTD<br>HAWKESBURY, ONTARIO, CANADA  |              |
| DRAWN      | RF  |  |              |
| CHECKED    | RF  | DRAWING NO.  | REV. F       |
| MFG. APPR. | RF  | D407-667-245   | SHEET 1 OF 4 |
| APPROVED   | RF  | TITLE  | SCALE        |
| DE APPR.   | RF  | CROSSTUBE ASSY (407 HIGH AFT)  | NTS          |
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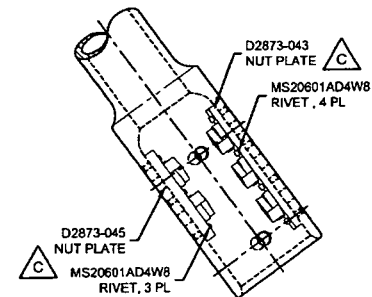
**D407-667-245  
ASSEMBLY DETAIL  
(VIEW LOOKING FWD)**



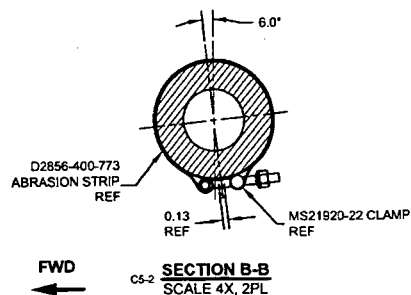
**VIEW A-A CUFF DETAIL  
SCALE 4X**



**SECTION C-C  
SCALE 4X**



**VIEW D-D CUFF DETAIL  
SCALE 4X**

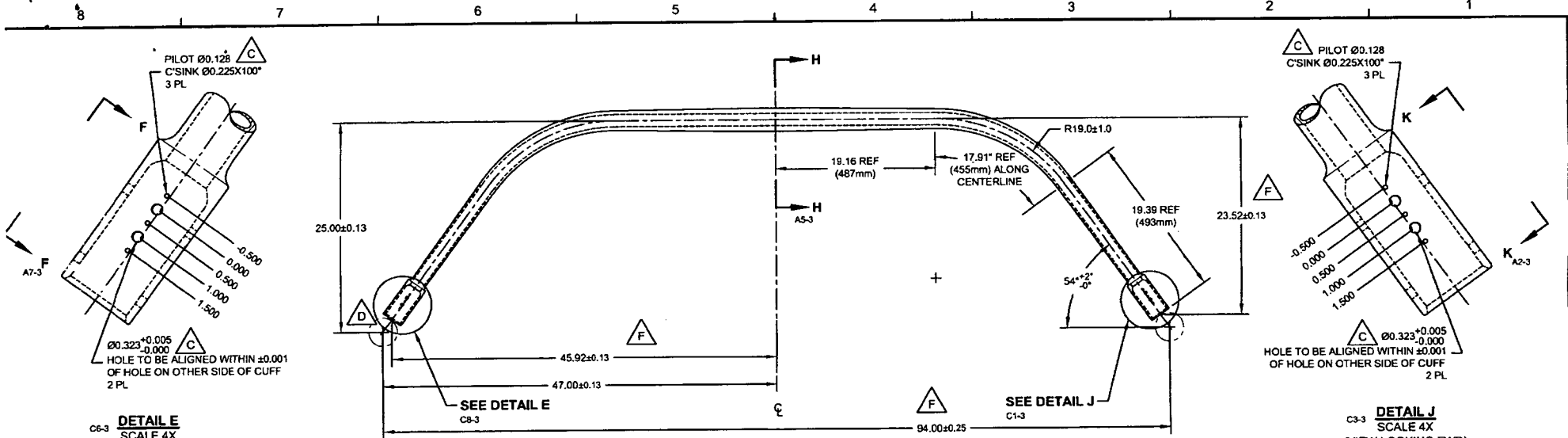


**SECTION B-B  
SCALE 4X, 2PL**

**RELEASED**

|            |          |   |              |
|------------|----------|---|--------------|
| DESIGN     | 40       | <b>DART AEROSPACE LTD</b>   |              |
| DRAWN      | RF       | HAWKESBURY, ONTARIO, CANADA   |              |
| CHECKED    | CP       | DRAWING NO.   | REV. F       |
| MFG. APPR. | EP       | D407-667-245  | SHEET 2 OF 4 |
| APPROVED   | EP       | TITLE   | SCALE        |
| DE APPR.   | EP       | CROSSTUBE ASS'Y (407 HIGH AFT)  | NTS          |
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53139

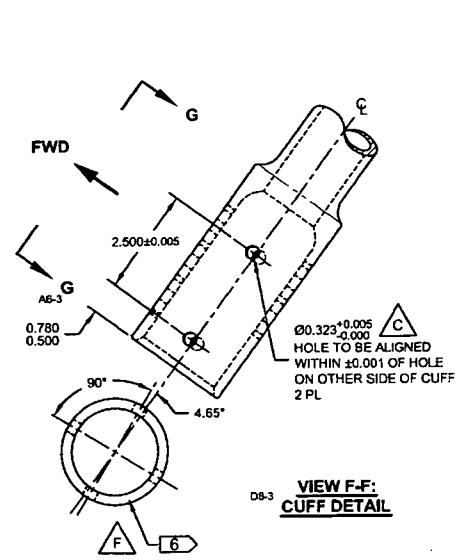


**DETAIL E**  
SCALE 4X  
(VIEW LOOKING FWD)

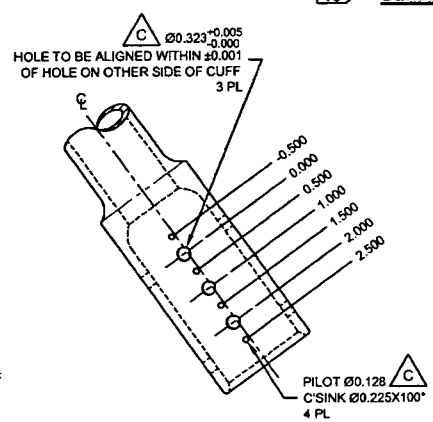
**DETAIL J**  
SCALE 4X  
(VIEW LOOKING FWD)

**D407-667-605**  
**BENDING AND DRILLING DETAIL**  
(VIEW LOOKING FWD)

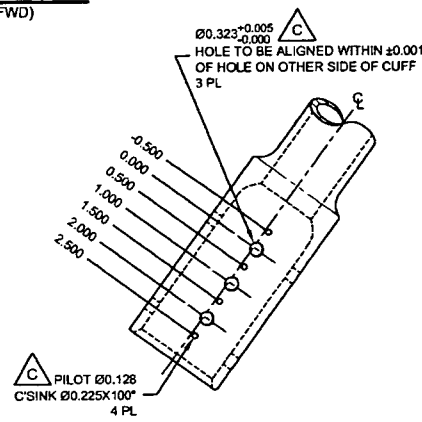
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02/11/12



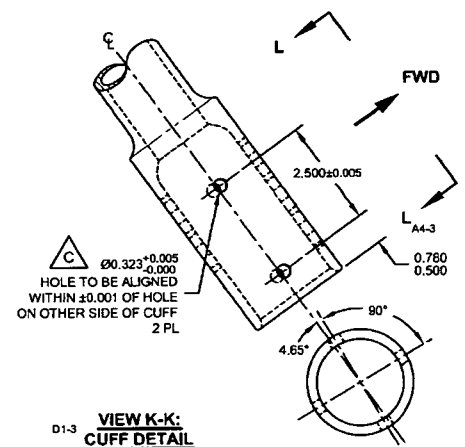
**VIEW F-F:**  
**CUFF DETAIL**



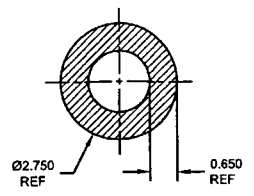
**VIEW G-G**  
(VIEW LOOKING AFT, ROTATED)



**VIEW L-L**  
(VIEW LOOKING AFT, ROTATED)

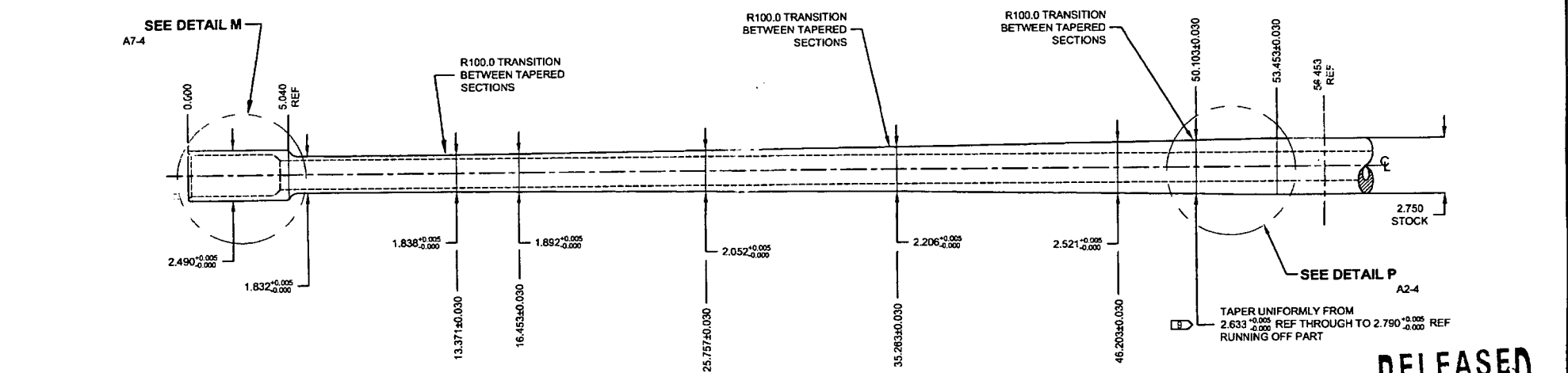


**VIEW K-K:**  
**CUFF DETAIL**

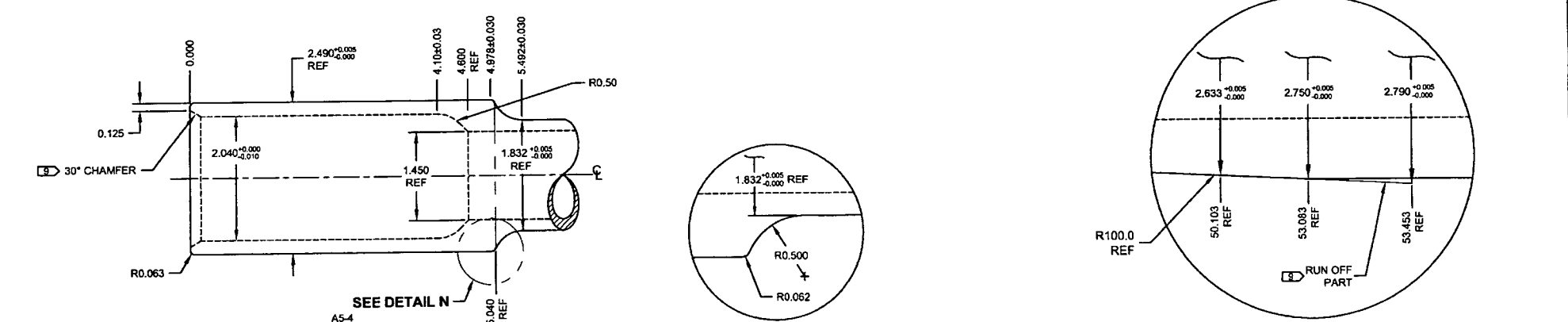


**SECTION H-H**  
SCALE 4X

|   |          |  |              |
|---|----------|--|--------------|
| DESIGN  | 40       | <b>DART AEROSPACE LTD</b>              |              |
| DRAWN   | RF       | HAWKESBURY, ONTARIO, CANADA            |              |
| CHECKED   | CP       | DRAWING NO.                            | REV. F       |
| MFG. APPR.  | GP       | D407-667-245                           | SHEET 3 OF 4 |
| APPROVED  | GP       | TITLE                                  | SCALE        |
| DE APPR.  | GP       | CROSSTUBE ASSY (407 HIGH AFT)          | NTS          |
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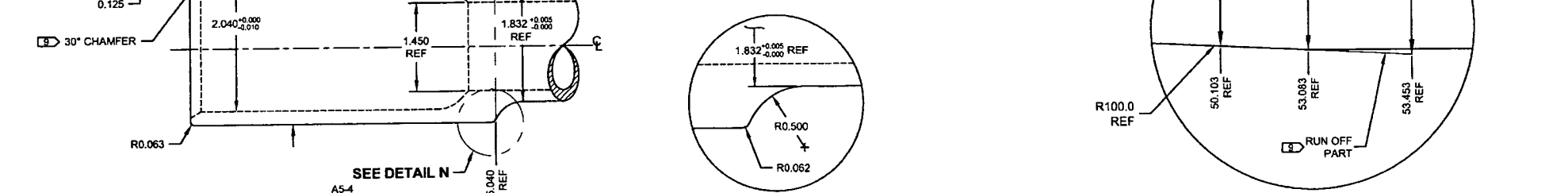
**D407-667-245 MACHINING DETAIL**



D8-4 DETAIL M: CROSSTUBE CUFF  
SCALE 3X

B6-4 DETAIL N: CUFF TRANSITION  
SCALE 2X

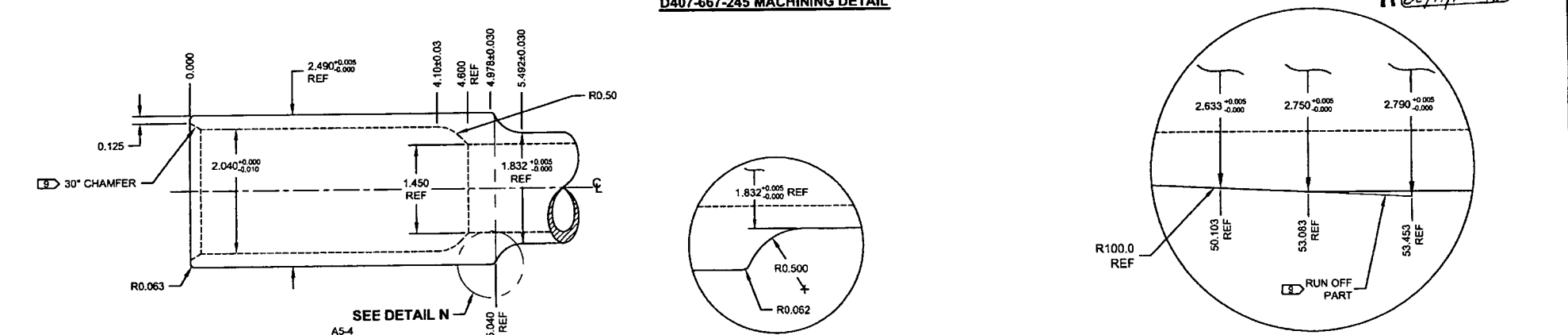
C1-4 DETAIL P: TAPER RUN-OFF  
NOT TO SCALE



D8-4 DETAIL M: CROSSTUBE CUFF  
SCALE 3X

B6-4 DETAIL N: CUFF TRANSITION  
SCALE 2X

C1-4 DETAIL P: TAPER RUN-OFF  
NOT TO SCALE



D8-4 DETAIL M: CROSSTUBE CUFF  
SCALE 3X

B6-4 DETAIL N: CUFF TRANSITION  
SCALE 2X

C1-4 DETAIL P: TAPER RUN-OFF  
NOT TO SCALE

|            |          |  |              |
|------------|----------|--|--------------|
| DESIGN     | RF       | <b>DART AEROSPACE LTD</b>  |              |
| DRAWN      | RF       | HAWKESBURY, ONTARIO, CANADA  |              |
| CHECKED    | RF       | DRAWING NO.  | REV. F       |
| MFG. APPR. | RF       | D407-667-245   | SHEET 4 OF 4 |
| APPROVED   | RF       | TITLE  | SCALE        |
| DE APPR.   | RF       | CROSSTUBE ASSY (407 HIGH AFT)  | NTS          |
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REFERENCE ONLY

## 5.0 PARTS LIST

| Item | Qty<br>-011 | Qty<br>-013 | Qty<br>-015 | Qty<br>-101 | Qty<br>-201 | Qty<br>-103 | Qty<br>-203 | Qty<br>-105 | Qty<br>-205 | Part Number   | Description  |
|------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|---------------|--|
|      | X           |             |             |             |             |             |             |             |             | D206-667-011  | SPACER BLOCK KIT                                     |
|      |             | X           |             |             |             |             |             |             |             | D206-667-013  | NUT PLATE KIT (-101/-103/-105/-203/-205)             |
|      |             |             | X           |             |             |             |             |             |             | D206-667-015  | NUT PLATE KIT (-201)                                 |
|      |             |             |             | X           |             |             |             |             |             | D206-667-101  | CROSSTUBE INSTALLATION,<br>206A/B HIGH FWD           |
|      |             |             |             |             | X           |             |             |             |             | D206-667-201  | CROSSTUBE INSTALLATION,<br>206A/B HIGH AFT           |
|      |             |             |             |             |             | X           |             |             |             | D206-667-103  | CROSSTUBE INSTALLATION,<br>206L/L-1/L-3/L-4 HIGH FWD |
|      |             |             |             |             |             |             | X           |             |             | D206-667-203  | CROSSTUBE INSTALLATION,<br>206L/L-1/L-3/L-4 HIGH AFT |
|      |             |             |             |             |             |             |             | X           |             | D407-667-105  | CROSSTUBE INSTALLATION, 407 HIGH FWD                 |
|      |             |             |             |             |             |             |             |             | X           | D407-667-205  | CROSSTUBE INSTALLATION, 407 HIGH AFT                 |
| 1    |             |             |             | 1           |             |             |             |             |             | D206-667-141  | CROSSTUBE ASSEMBLY, 206A/B HIGH FWD                  |
| 2    |             |             |             |             | 1           |             |             |             |             | D206-667-241  | CROSSTUBE ASSEMBLY, 206A/B HIGH AFT                  |
| 3    |             |             |             |             |             | 1           |             |             |             | D206-667-143  | CROSSTUBE ASSEMBLY,<br>206L/L-1/L-3/L-4 HIGH FWD     |
| 4    |             |             |             |             |             |             | 1           |             |             | D206-667-243  | CROSSTUBE ASSEMBLY,<br>206L/L-1/L-3/L-4 HIGH AFT     |
| 5    |             |             |             |             |             |             |             | 1           |             | D407-667-145  | CROSSTUBE ASSEMBLY, 407 HIGH FWD                     |
| 6    |             |             |             |             |             |             |             |             | 1           | D407-667-245  | CROSSTUBE ASSEMBLY, 407 HIGH AFT                     |
| 10   |             |             |             | *2          | *2          | *2          |             | *2          |             | D2891-1       | SUPPORT  |
| 11   |             |             |             |             |             |             | *2          |             |             | D2892-1       | SUPPORT  |
| 12   |             |             |             |             |             |             |             |             | *1          | D2894-1       | SUPPORT  |
| 13   |             |             |             | *2          | *2          | *2          |             | *2          |             | D2856-400-694 | ABRASION STRIP                                       |
| 14   |             |             |             |             |             |             | *2          |             | *2          | D2856-400-773 | ABRASION STRIP                                       |
| 15   |             |             |             |             |             |             |             |             | *1          | D2856-600-851 | ABRASION STRIP                                       |
| 16   |             |             |             | *4          | *4          | *4          |             | *4          |             | MS21920-20    | CLAMP  |
| 17   |             |             |             |             |             |             | *4          |             | *4          | MS21920-22    | CLAMP  |
| 18   |             |             |             |             |             |             |             |             | *2          | MS21920-24    | CLAMP  |
| 19   |             |             |             | 4           | 4           | 4           |             | 4           |             | AN5-32A       | BOLT   |
| 20   |             |             |             |             |             |             | 4           |             | 4           | AN5-34A       | BOLT   |
| 21   |             |             |             | 4           | 4           | 4           | 4           | 4           | 4           | MS21042L5     | NUT (OR MS21042-5)                                   |
| 22   |             |             |             | 8           | 8           | 8           | 8           | 8           | 8           | AN960JD516    | WASHER   |
| 23   |             |             |             |             |             |             |             |             | *2          | D3190-1       | CHAFING SHIELD                                       |
| 30   | 8           |             |             |             |             |             |             |             |             | AN4-6A        | BOLT   |
| 31   | 8           |             |             |             |             |             |             |             |             | AN4-7A        | BOLT   |
| 32   | 16          |             |             |             |             |             |             |             |             | AN960JD416    | WASHER   |
| 33   | 2           |             |             |             |             |             |             |             |             | D3193-041     | SPACER BLOCK ASSEMBLY                                |
| 40   |             | 2           |             | *2          |             | *2          | *2          | *2          | *2          | D2873-043     | NUT PLATE  |
| 41   |             | 2           |             | *2          |             | *2          | *2          | *2          | *2          | D2873-045     | NUT PLATE  |
| 42   |             |             | 2           |             | 2           |             |             |             |             | D2872-043     | NUT PLATE  |
| 43   |             |             | 2           |             | 2           |             |             |             |             | D2872-045     | NUT PLATE  |
| 44   |             | 10          |             | 10          |             | 10          |             |             |             | AN5-7A        | BOLT   |
| 45   |             | 10          | 10          |             | 10          |             | 10          | 10          | 10          | AN5-10A       | BOLT   |
| 46   |             | 4           | 4           | 4           | 10          | 4           |             | 4           |             | AN5-30A       | BOLT   |
| 47   |             | 4           |             |             |             |             | 4           |             | 4           | AN5-32A       | BOLT   |
| 48   |             | 18          | 18          | 10          | 12          | 10          | 10          | 10          | 10          | AN960JD516    | WASHER   |
| 49   |             | 4           | 4           |             | 6           |             |             |             |             | MS21042L5     | NUT (OR MS21042-5)                                   |

\*REFERENCE ONLY. PARTS ARE INCLUDED IN D206-667-141/241/143/243, &amp; D407-667-145/245 ASSEMBLIES ABOVE

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Revision: C

Date: 05.07.26



# LIQUID PENETRANT TEST REPORT

P- 15308

CLIENT DART AEROSPACE DATE NOVEMBER 12 PAGE 1 OF 1  
ATTENTION LINDA/CHANTEL TIME AM ☒ PM ☐  
ADDRESS 1270 ABELDEEN ST. ACUREN JOB NO. 188-09-200800638  
HAWKES RUBY, ON. PO/WO NO. 10748  
KGH IK7 WORK LOCATION SAME AS NOTED.  
PROJECT F.P.I. ON CROSS TUBES. ACCEPTANCE STD. ASTM 1417 REV./DATE 2007  
ITEM(S) EXAMINED FIVE ITEMS

JOB DESCRIPTION PROCEDURE NO. LT-0002 REV./DATE TECHNIQUE NO. LT-Test 2 REV./DATE  
PART NO. — MATERIAL ALUMINUM THICKNESS N/A  
SCOPE WET FLUORESCENT LIQUID PENETRANT INSPECTION  
CARRIED OUT 100% EXTERNAL

TEST DETAILS  
METHOD ☒ FLUORESCENT ☐ VISIBLE ☒ WATER WASH ☐ SOLVENT REMOVABLE ☐ POST EMULSIFIED  
FAMILY BRAND MAGNAFLUX BLACK LIGHT S/N 16459 ☒ OUTPUT > 1000  $\mu$ W/cm<sup>2</sup> ☐ AMBIENT < 2 fc  
PENETRANT 2L 67 MINIMUM DWELL TIME 45 MIN. LIGHTING EQUIP. ☐ FLASHLIGHT ☐ TROUBLELIGHT ☐ OUTPUT > 100 fc @ SURFACE  
PENETRANT REMOVER 120 MINIMUM DRY TIME >10 MIN. OTHER LABINO  
DEVELOPER SKD 52 MINIMUM DWELL TIME 10 MIN. LIGHT METER S/N  
DEVELOPER TYPE ☒ NON AQUEOUS ☐ AQUEOUS ☐ DRY CAL DUE DATE DEC. 8, 2007

TEST SURFACE  
SURFACE CONDITION ☐ AS GROUND ☐ AS WELDED ☒ MACHINED ☐ SHOT BLASTED ☐ CLEAN BARE METAL  
SURFACE TEMPERATURE ☐ < -4°C/ 20°F ☐ -4°C/ 20°F TO 10°C/50°F ☒ 10°C/50°F TO 52°C/125°F ☐ > 52°C/125°F

RESULTS- ( ☐ METRIC ☐ IMPERIAL )

1 CROSS TUBE - W.O. 53139 ✓  
1 CROSS TUBE - W.O. 53140 ✓  
1 CROSS TUBE - W.O. 53271 ✓  
1 CROSS TUBE - W.O. 53272 ✓  
1 CROSS TUBE - W.O. 52050 ✓

*MA* 09/11/19

## Scope of Services

The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

## Standard of Care

In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

## SIGNATURES

CLIENT REPRESENTATIVE MATT MURDOCH DTR # E-27851  
TECHNICIAN (SIGNATURE): [Signature] SIGNATURE  
NAME (PRINT): Mike Johnston REPORT REVIEWED BY:  
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